

## Supporting Information

### Reverse docking

The protein structure data utilized in this study were sourced from the PDBbind database, comprising a total of 17654 entries. Reverse docking was executed using Glide Dock, a specialized docking program developed by Schrödinger. The resulting analysis identified the top 50 structures, ranked based on their highest docking scores, as outlined below:

**Table S1** Top 50 docking score of reverse docking.

Num.	PDB	Docking score	Num.	PDB	Docking score
1	5flj	-16.97	26	4ckr	-13.54
2	5mym	-15.97	27	1fm9	-13.52
3	5ioy	-15.82	28	5vqx	-13.52
4	4csj	-15.35	29	5vqt	-13.50
5	3hfj	-14.61	30	3are	-13.49
6	4hvs	-14.60	31	2hz0	-13.48
7	3mlb	-14.49	32	5m7m	-13.43
8	5ipa	-14.41	33	2og8	-13.42
9	4m3e	-13.86	34	3ctq	-13.41
10	3n7h	-13.80	35	4m3f	-13.41
11	4ymj	-13.79	36	5q15	-13.39
12	3k22	-13.79	37	4m3d	-13.34
13	5ezh	-13.79	38	5vqq	-13.32
14	3g08	-13.76	39	4dlj	-13.29
15	4pms	-13.71	40	5f04	-13.27
16	6c0n	-13.71	41	4m3b	-13.24
17	3k84	-13.67	42	3fun	-13.19
18	6fni	-13.66	43	2vj8	-13.18
19	5f0h	-13.66	44	4at4	-13.18
20	2ofv	-13.64	45	4omk	-13.16
21	3qri	-13.62	46	5yqo	-13.15
22	4ono	-13.59	47	5vqr	-13.14
23	4mxc	-13.57	48	3ftz	-13.14
24	5mo8	-13.56	49	4i5h	-13.13
25	4ckr	-13.54	50	3ugc	-13.13

# <sup>1</sup>H, <sup>13</sup>C NMR and HRMS spectra

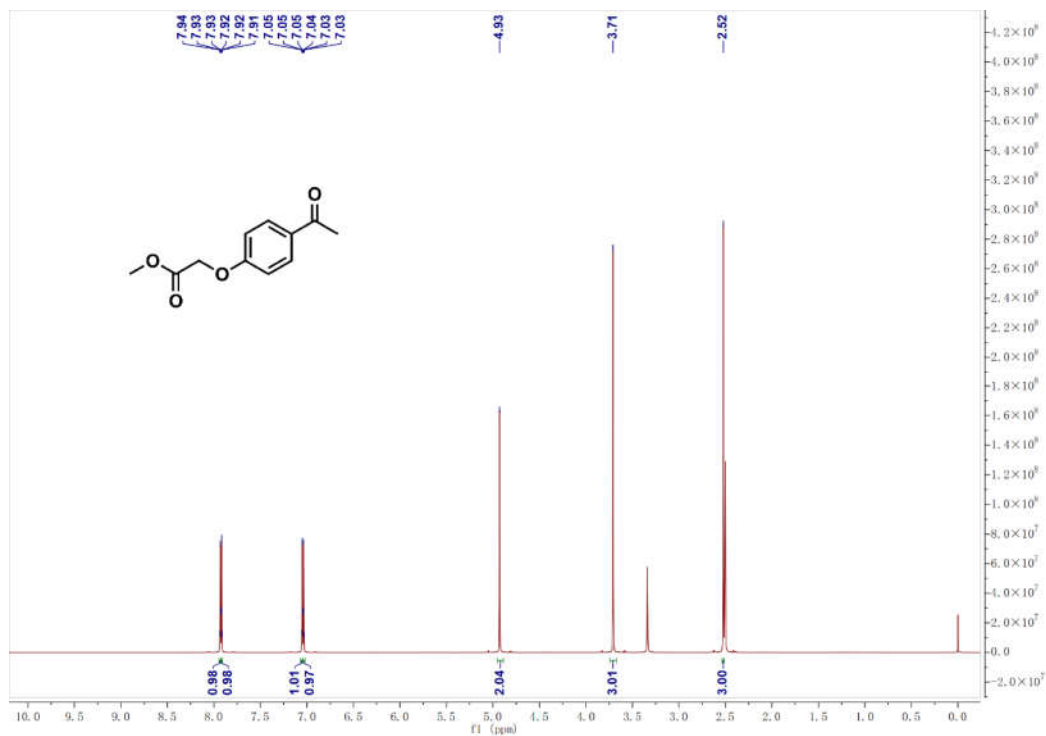


Figure S1. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound 1

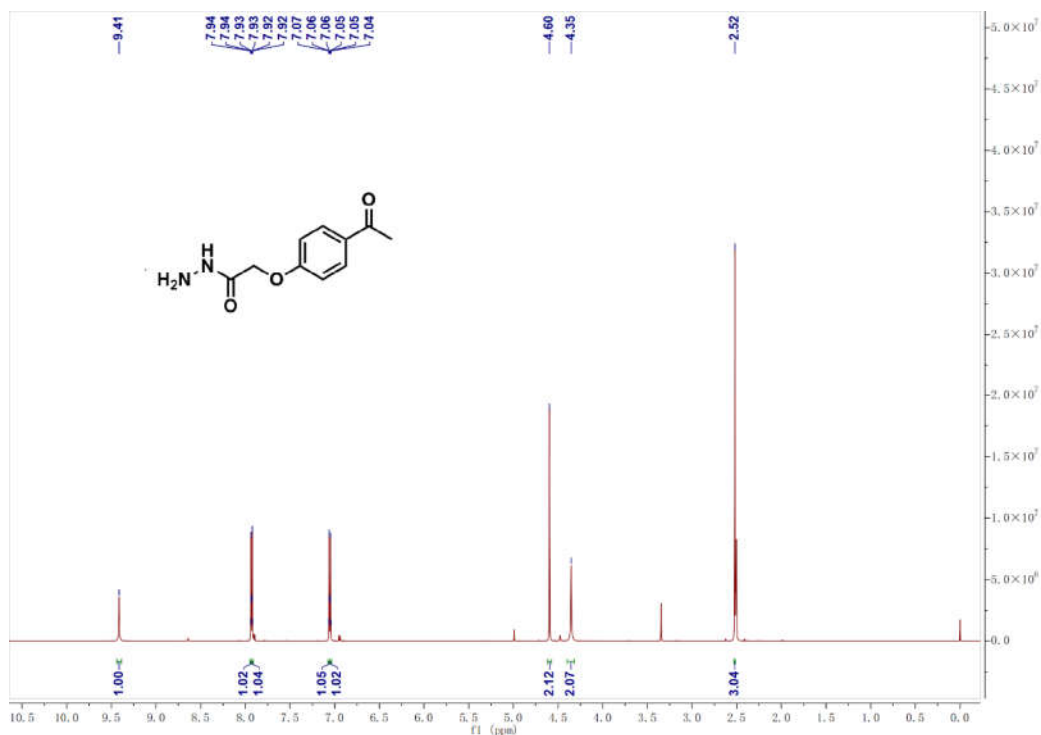
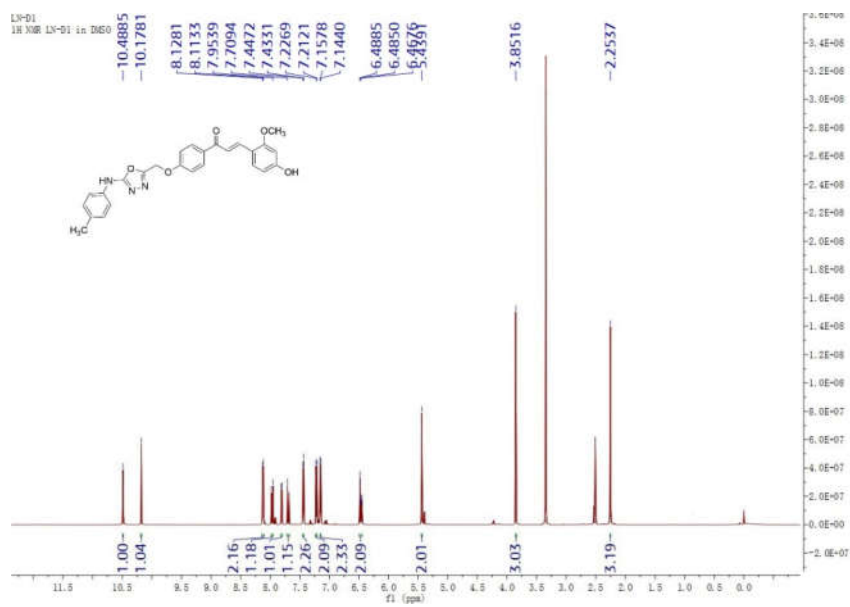
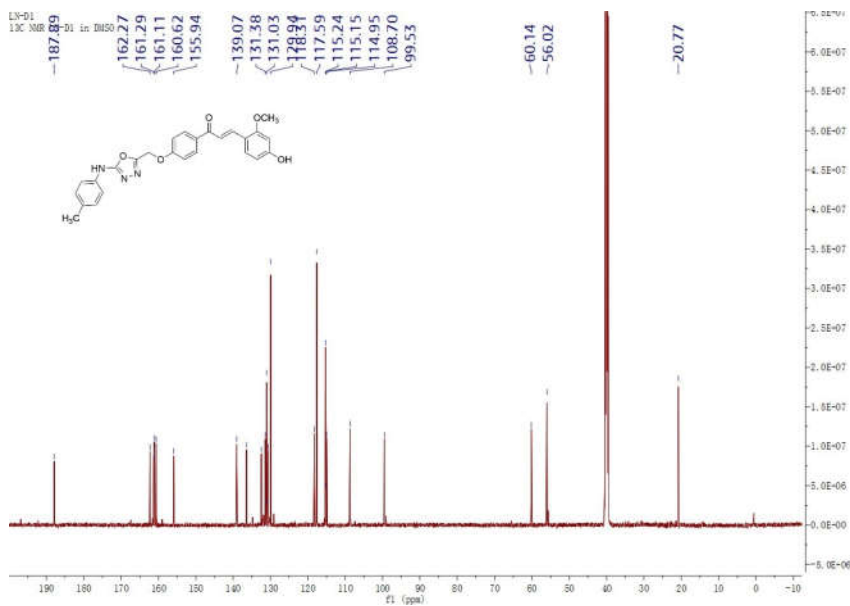


Figure S2. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound 2



**Figure S3.**  $^1\text{H}$  NMR (600 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T1



**Figure S4.**  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T1

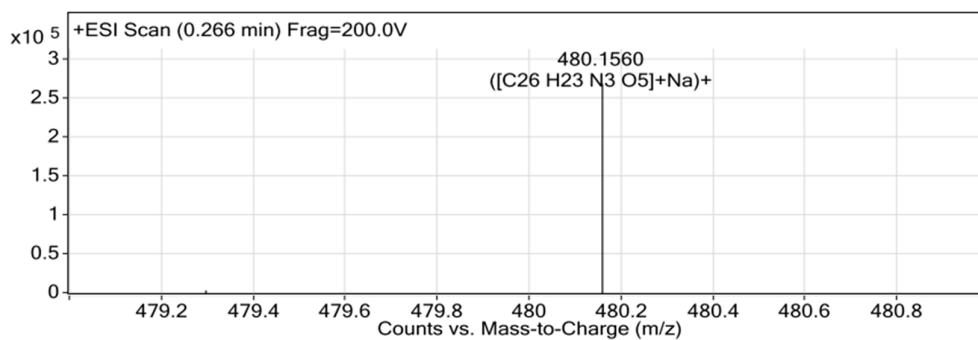


Figure S5. Mass spectrum of compound T1

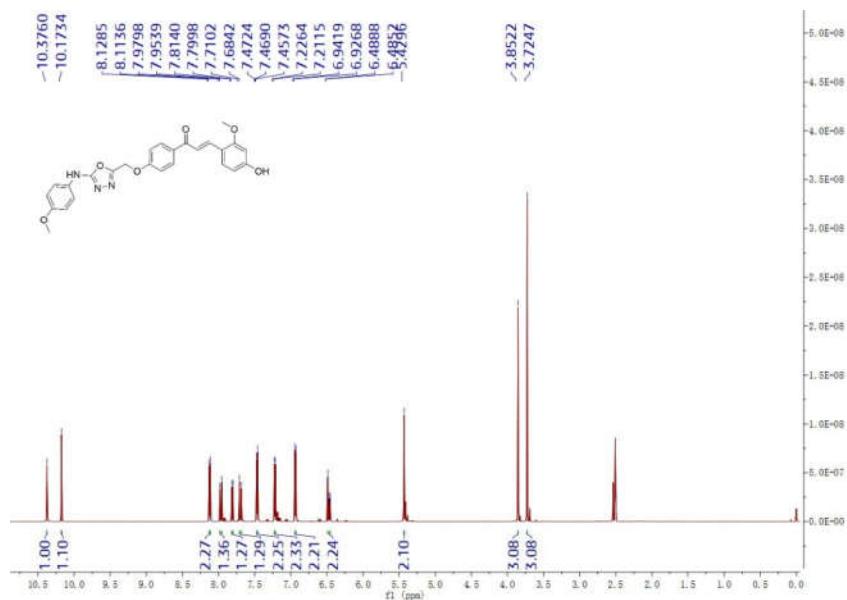


Figure S6. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T2

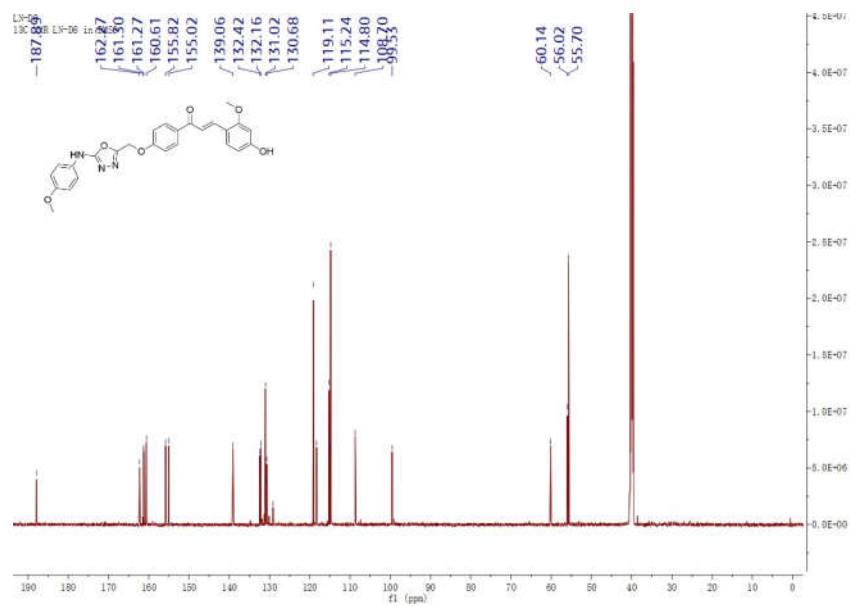


Figure S7. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T2

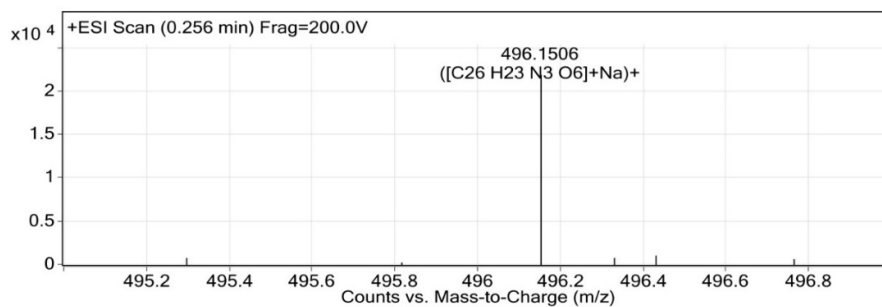


Figure S8. Mass spectrum of compound T2

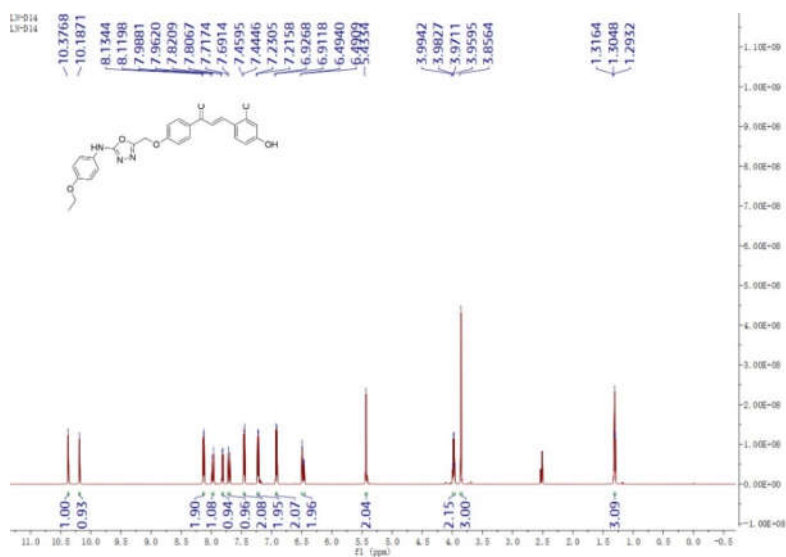


Figure S9. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T3

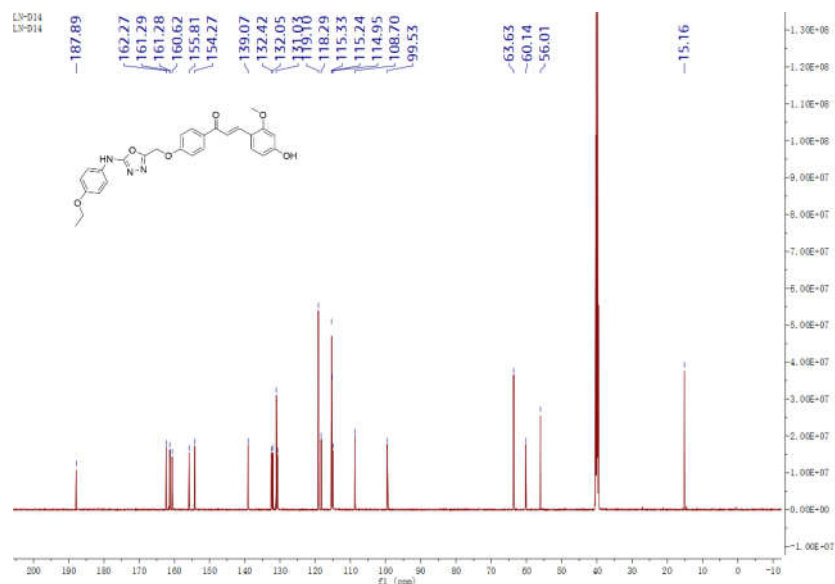


Figure S10. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T3

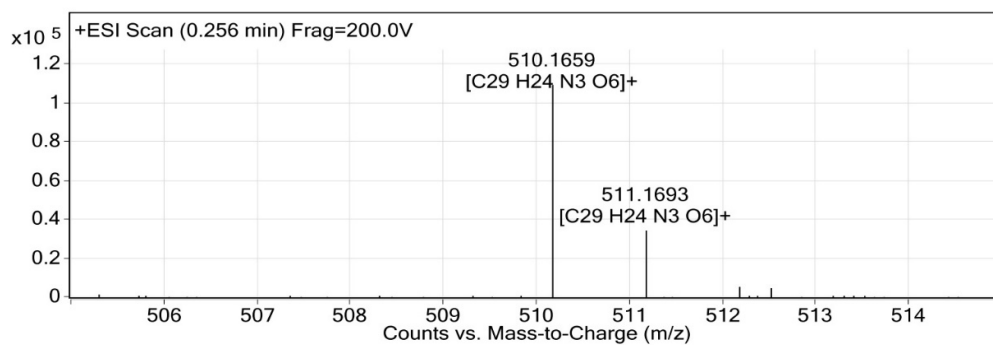


Figure S11. Mass spectrum of compound T3

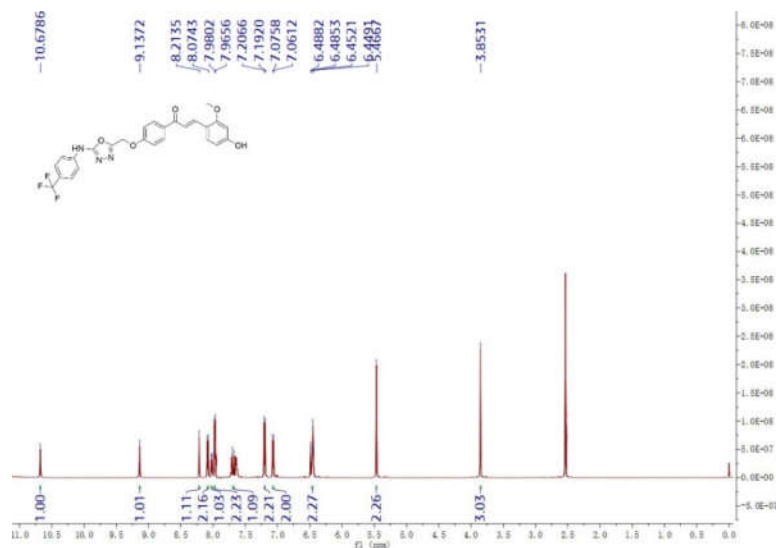
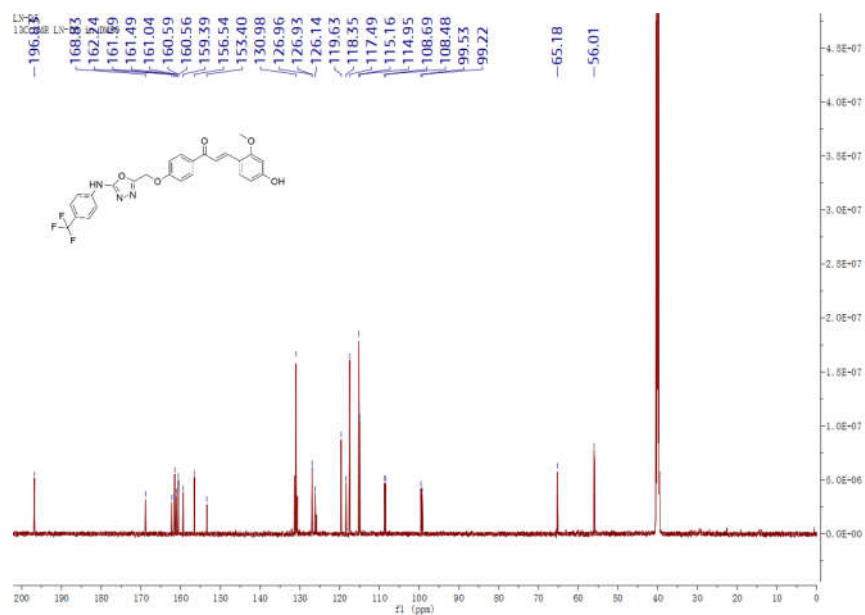
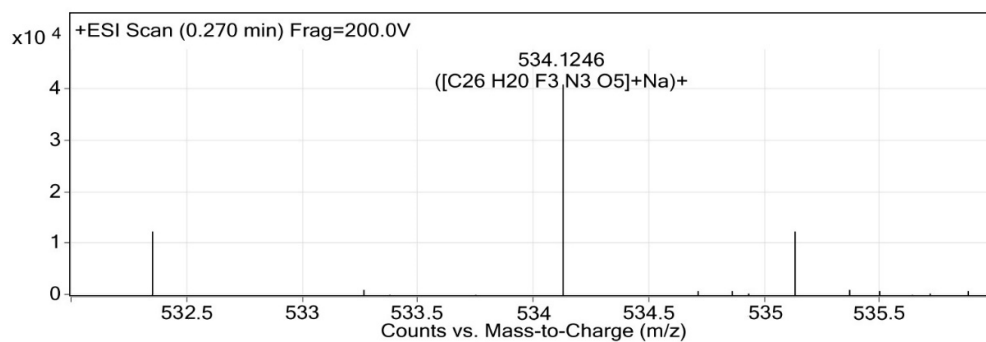


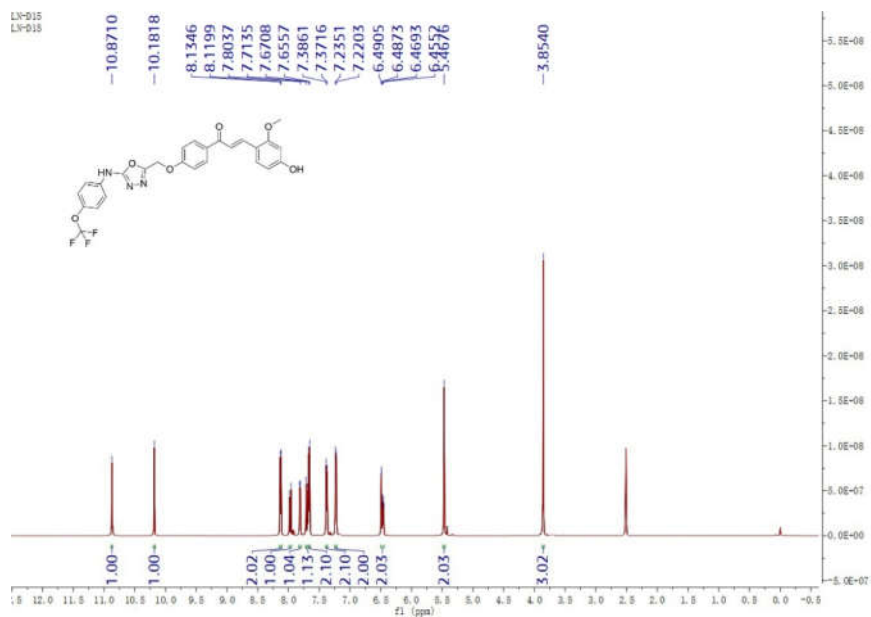
Figure S12. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T4



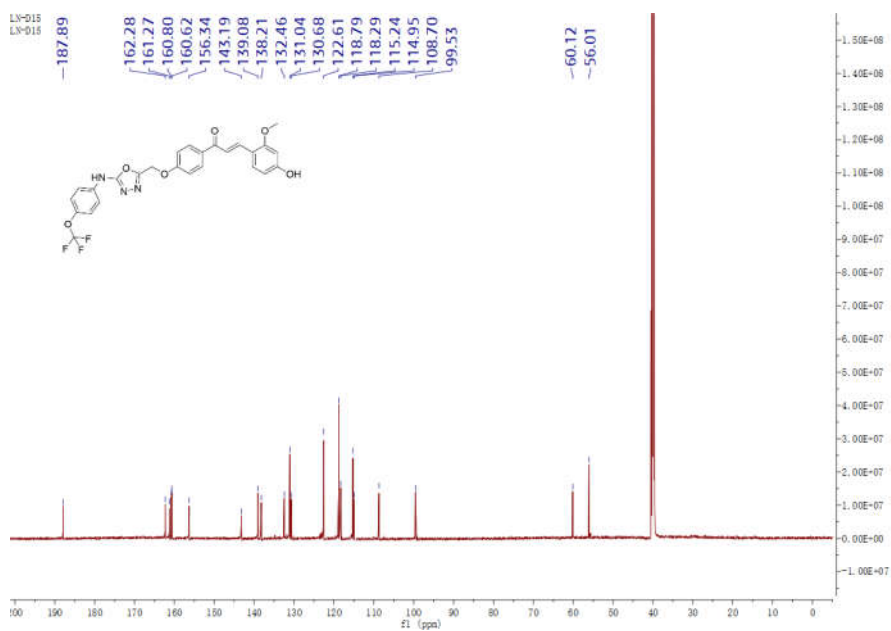
**Figure S13.** <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T4



**Figure S14.** Mass spectrum of compound T4



**Figure S15.**  $^1\text{H}$  NMR (600 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound T5



**Figure S16.**  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound T5

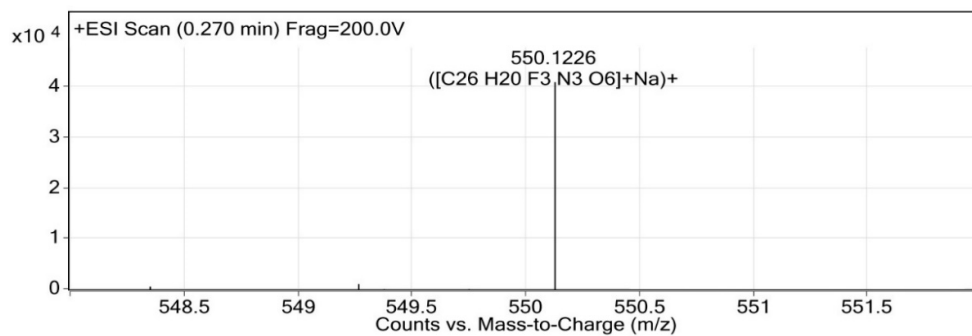


Figure S17. Mass spectrum of compound T5

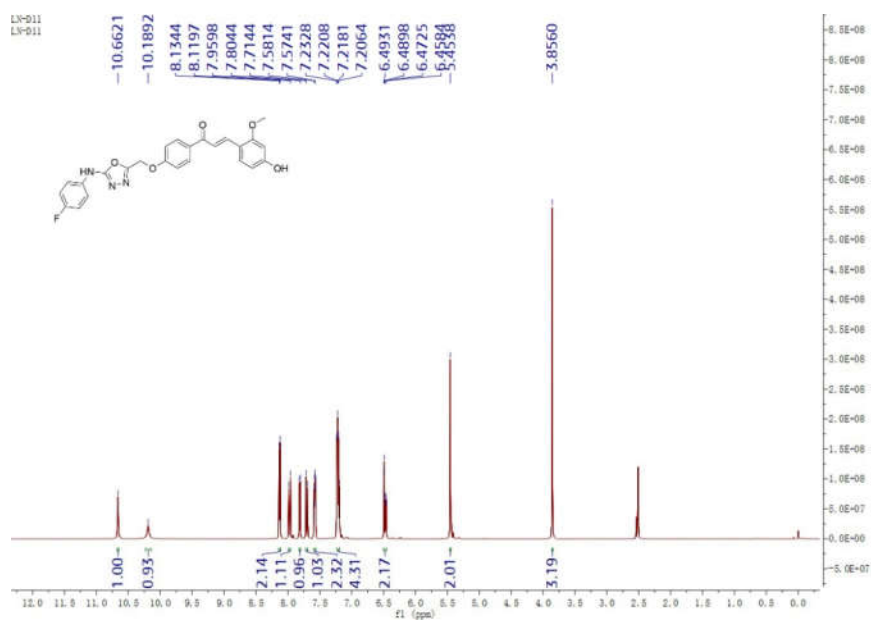
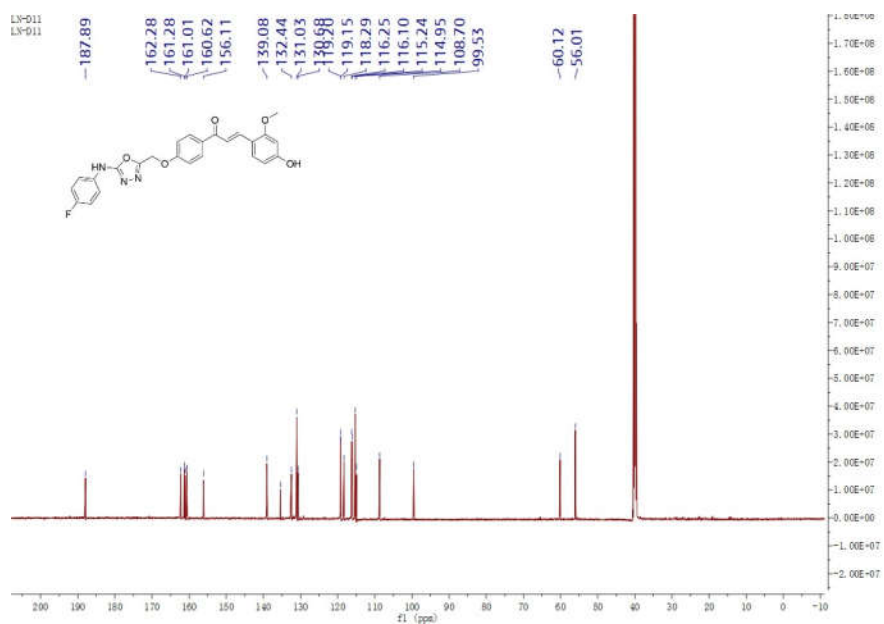
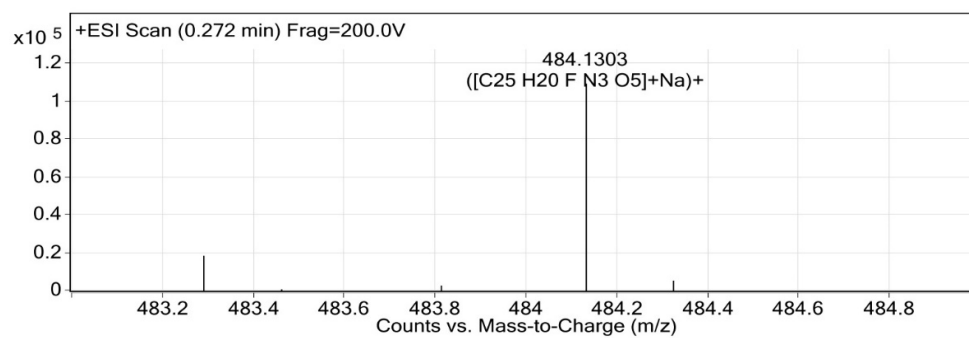


Figure S18. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T6



**Figure S19.** <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T6



**Figure S20.** Mass spectrum of compound T6

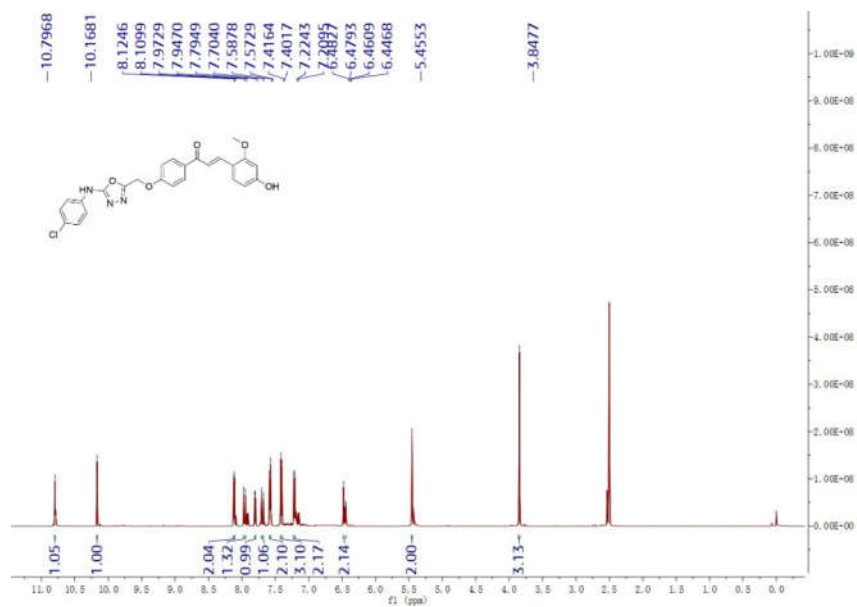


Figure S21. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T7

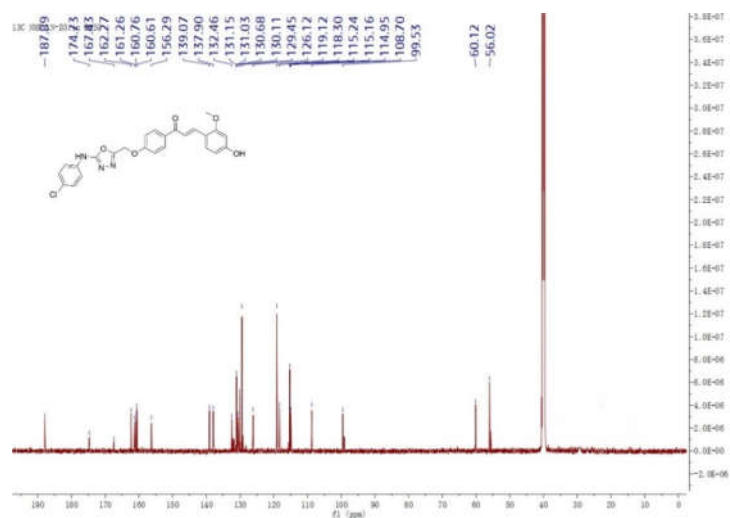


Figure S22. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T7

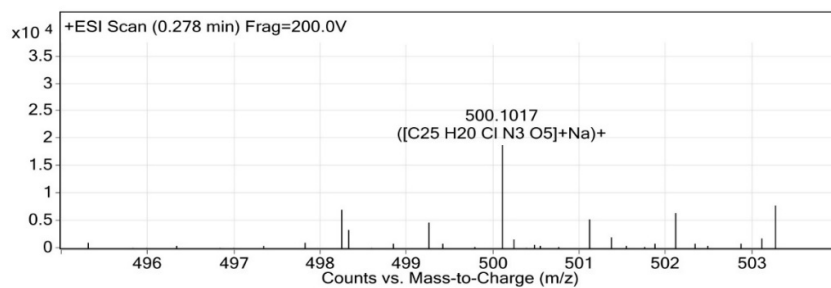


Figure S23. Mass spectrum of compound T7

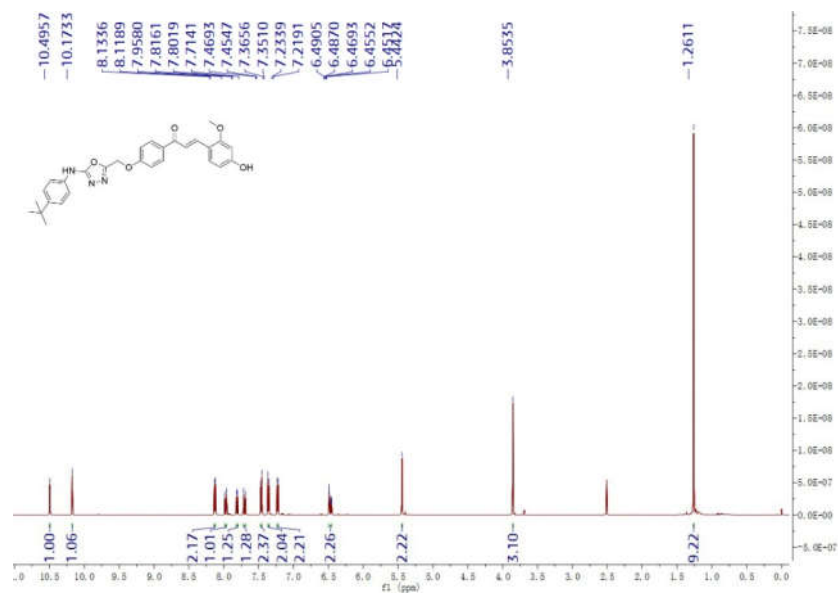


Figure S24.  $^1\text{H}$  NMR (600 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T8

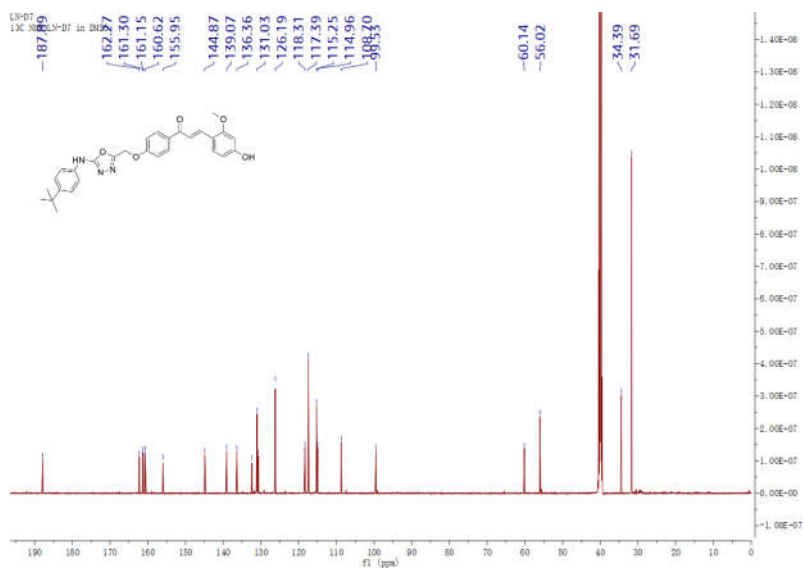


Figure S25.  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T8

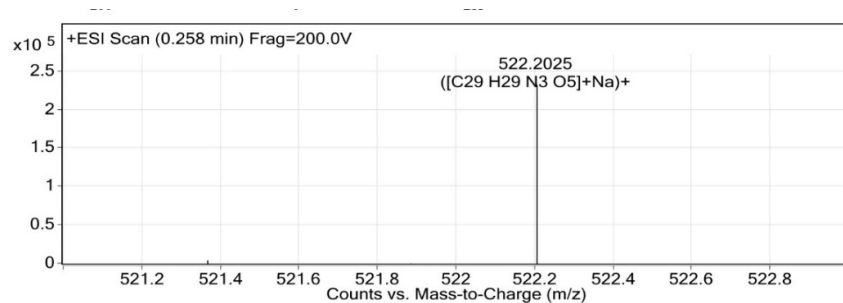
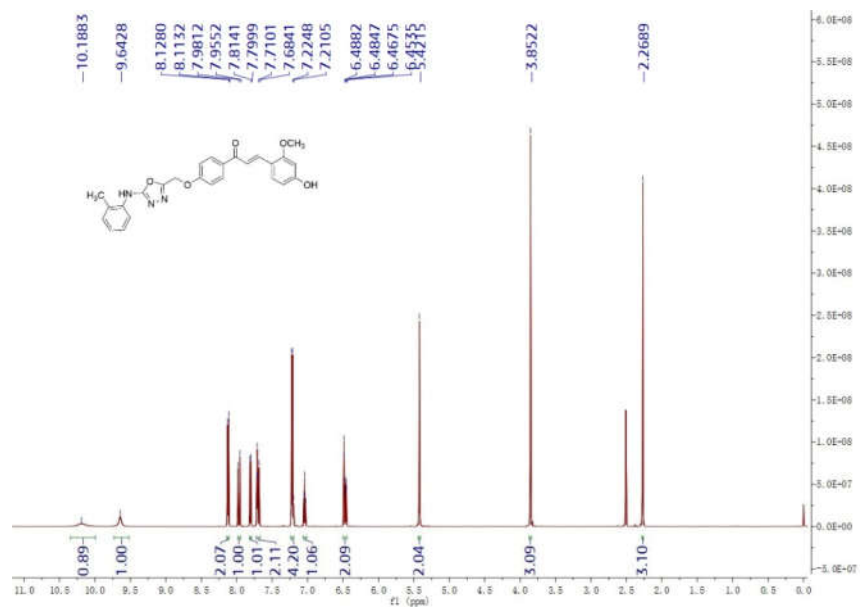
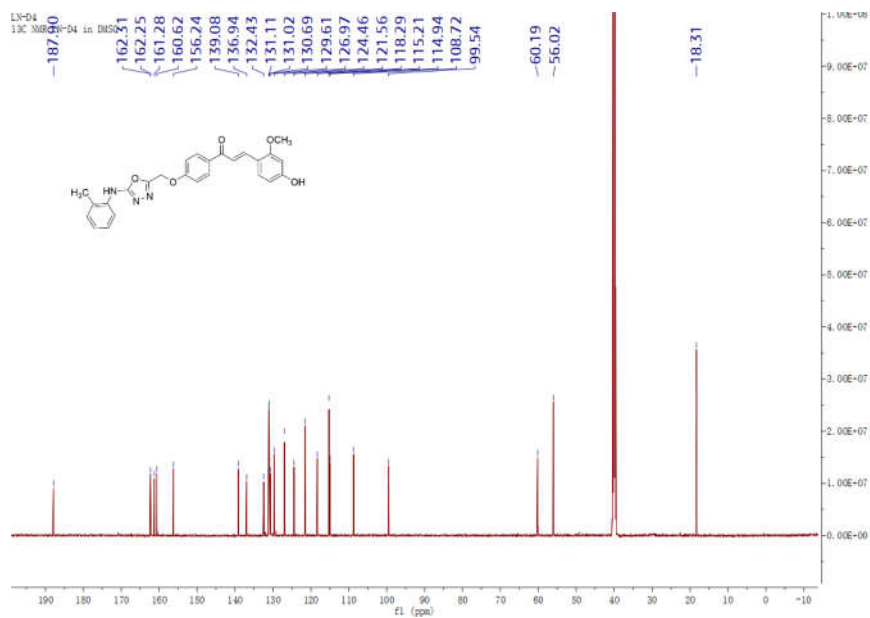


Figure S26. Mass spectrum of compound T8



**Figure S27.** <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T9



**Figure S28.** <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T9

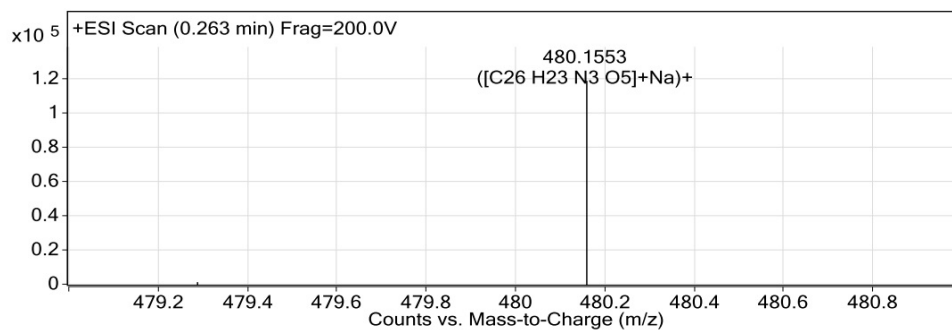


Figure S29. Mass spectrum of compound T9

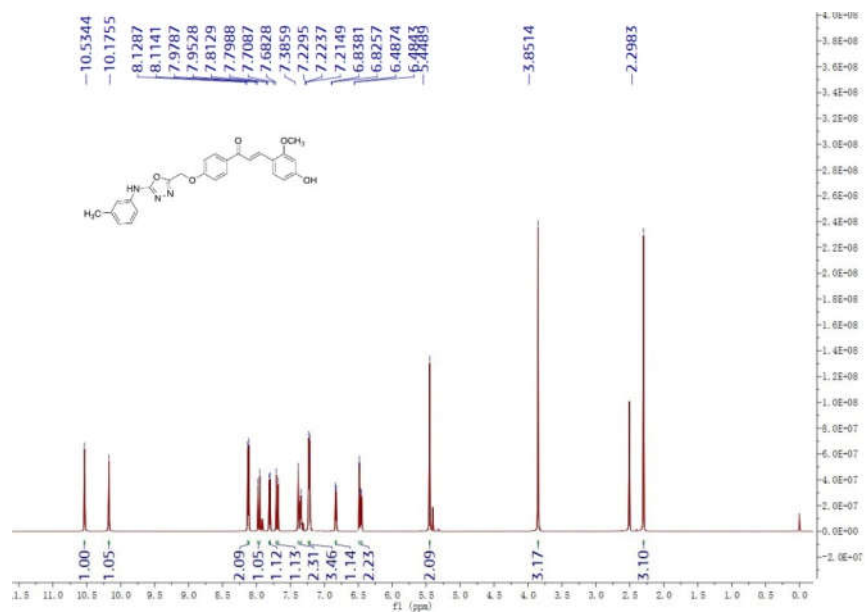


Figure S30. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T10

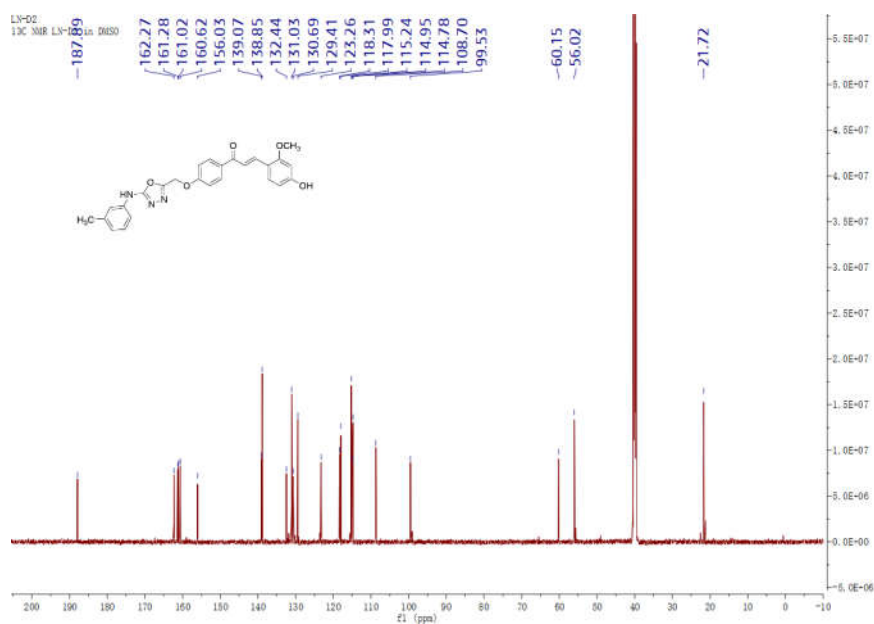


Figure S31. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T10

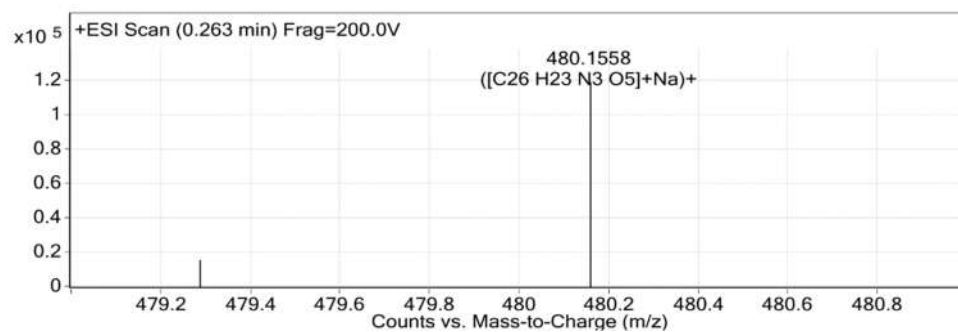


Figure S32. Mass spectrum of compound T10

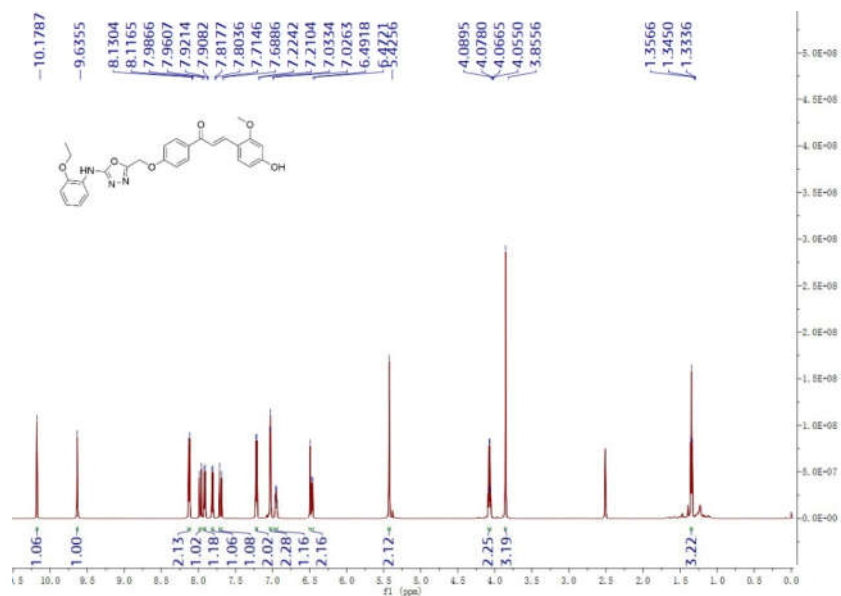


Figure S33.  $^1\text{H}$  NMR (600 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T11

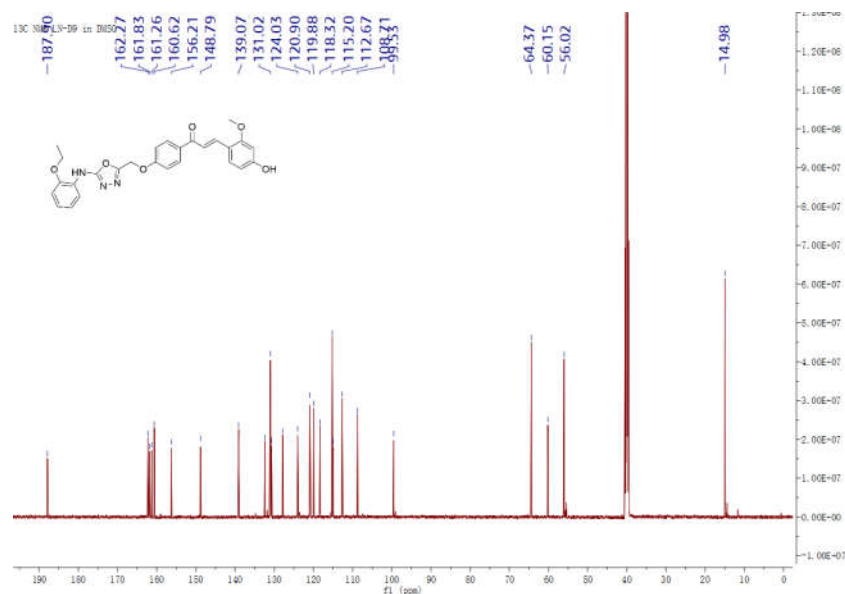


Figure S34.  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T11

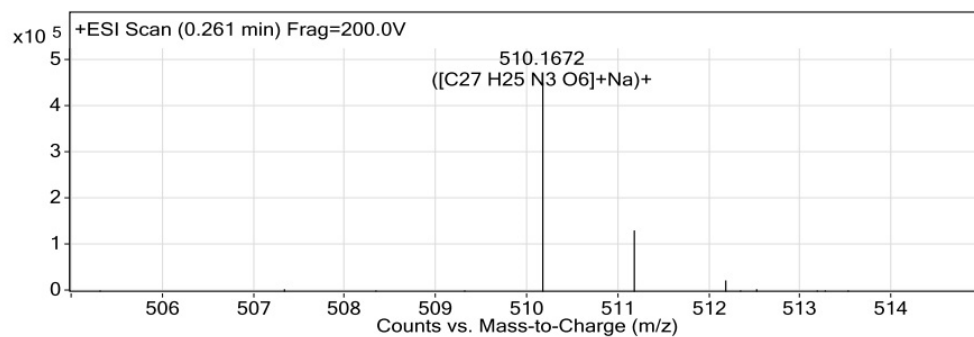


Figure S35. Mass spectrum of compound T11

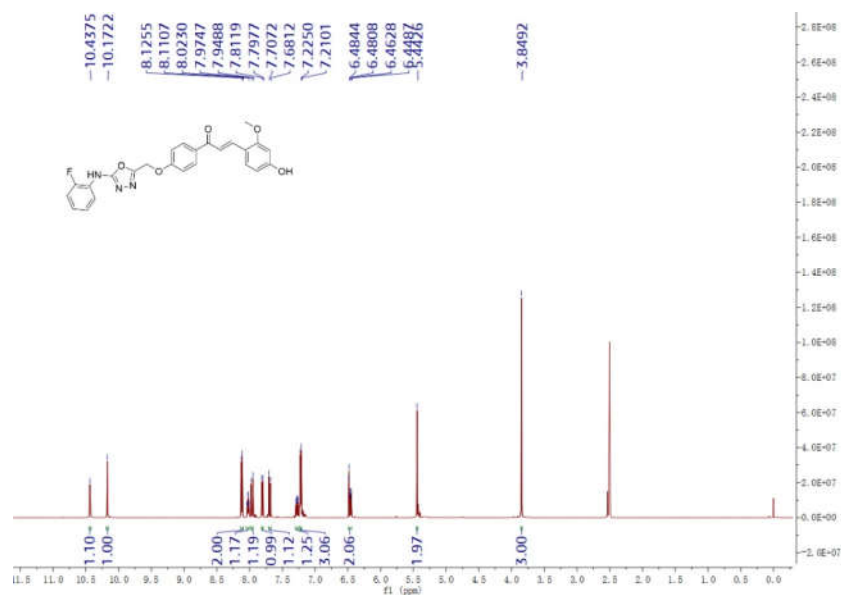


Figure S36.  $^1\text{H}$  NMR (600 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T12

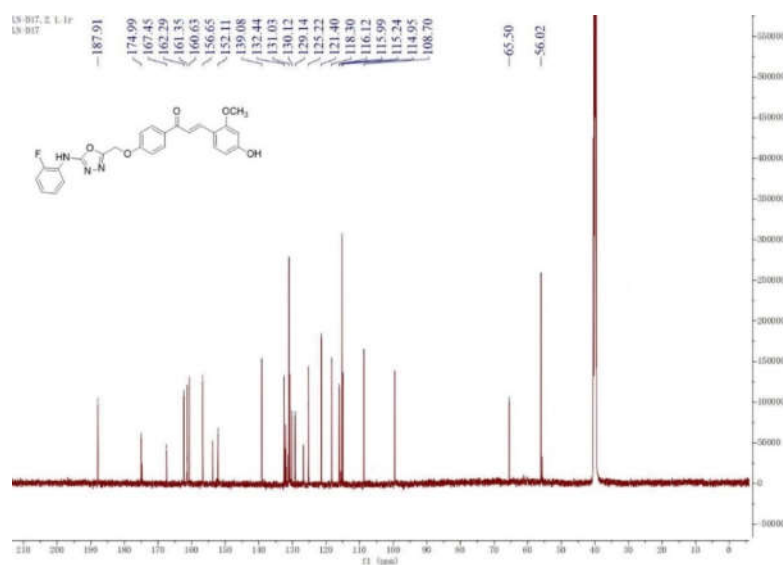


Figure S37.  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO}-d_6$ ) spectrum of compound T12

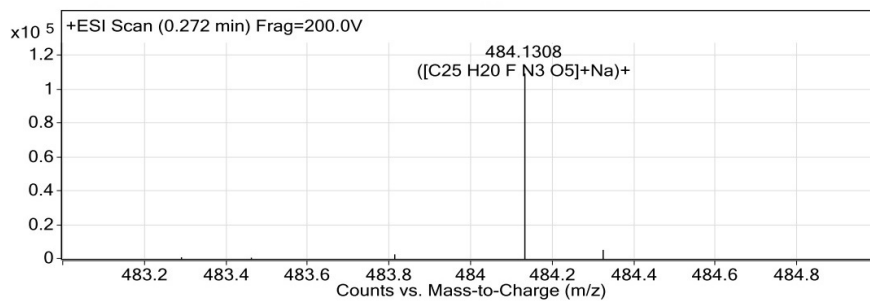
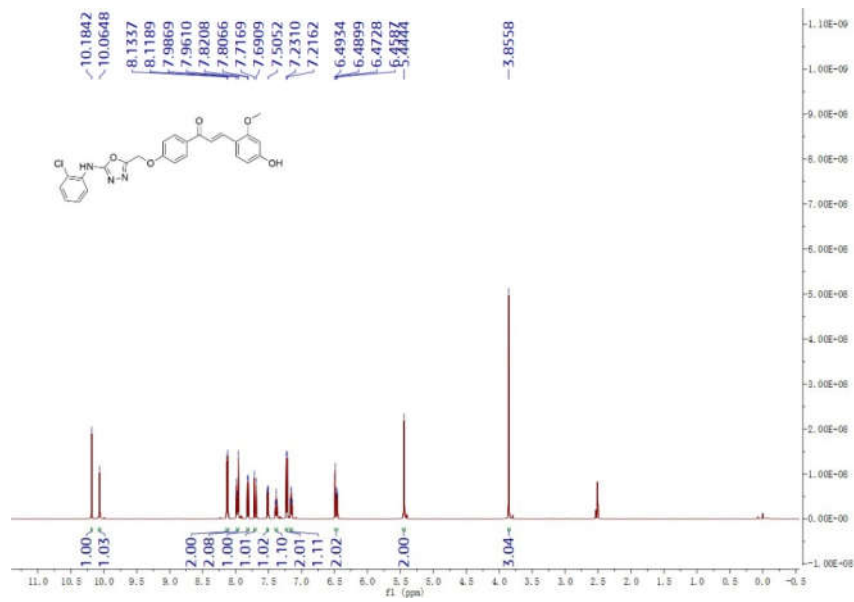
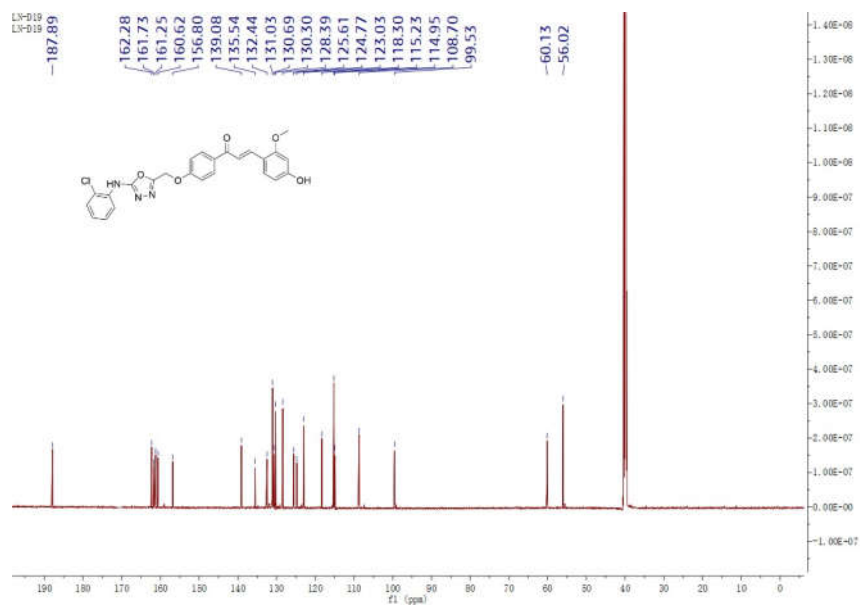


Figure S38. Mass spectrum of compound T12



**Figure S39.** <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T13



**Figure S40.** <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T13

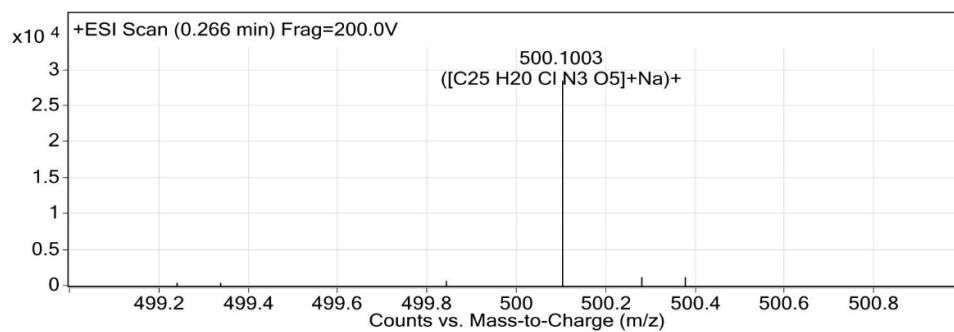


Figure S41. Mass spectrum of compound T13

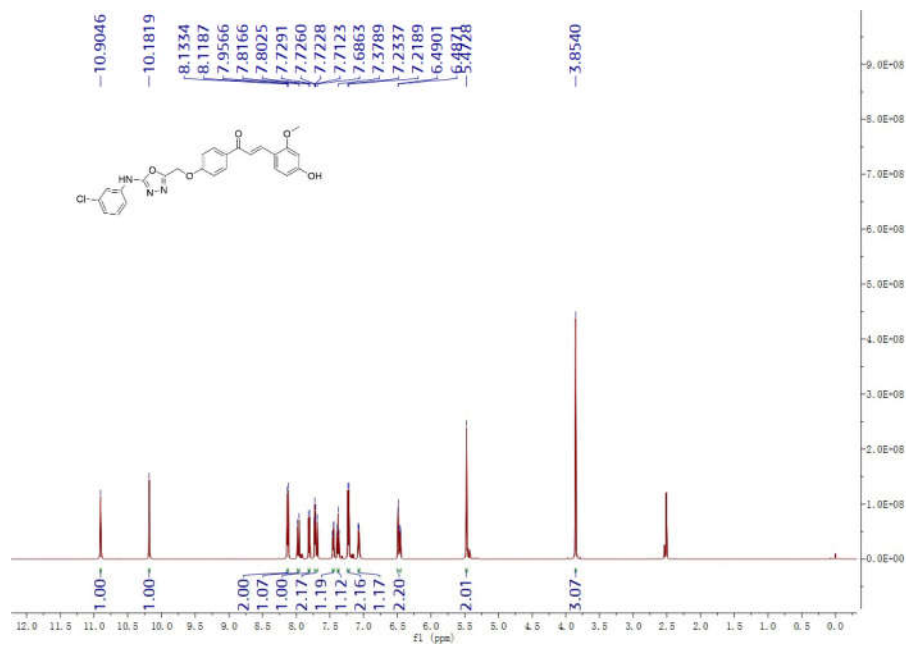


Figure S42. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T14

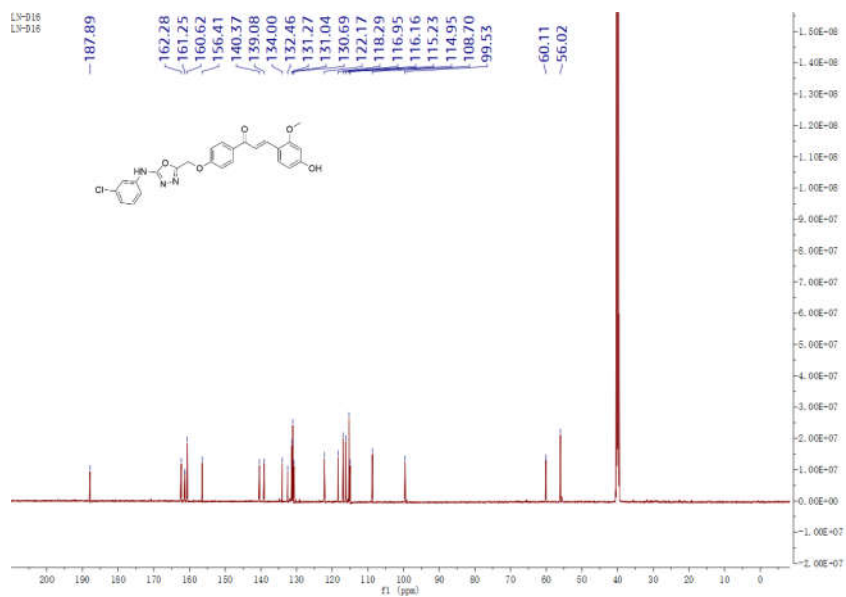


Figure S43. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T14

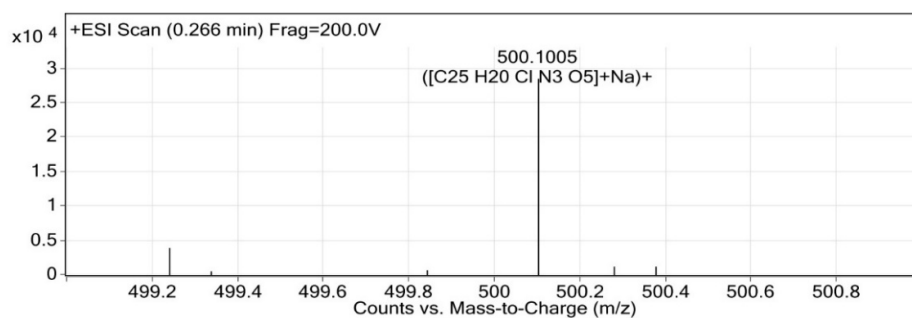


Figure S44. Mass spectrum of compound T14

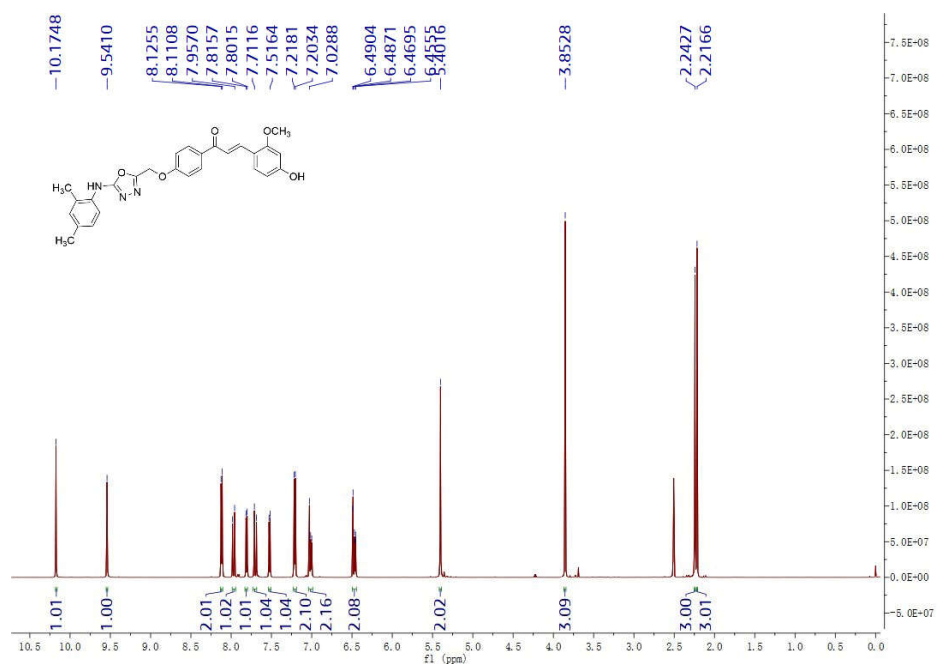


Figure S45. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T15

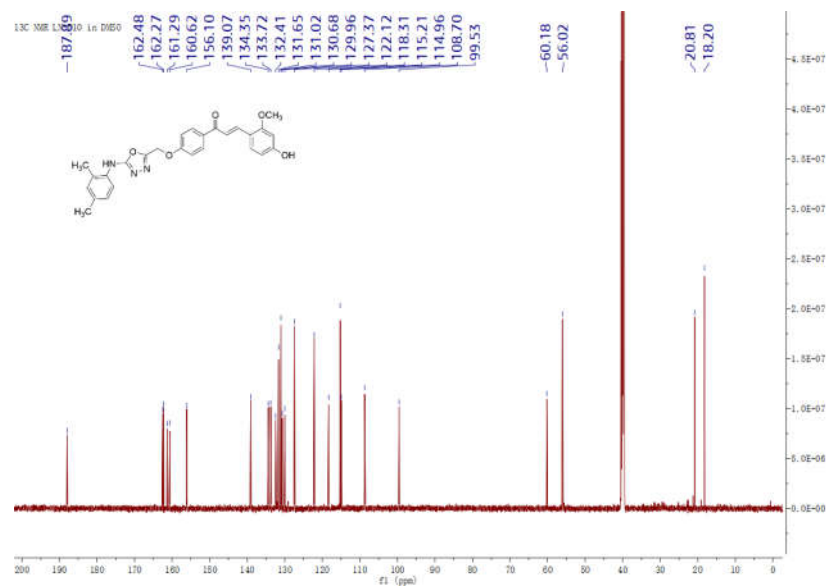


Figure S46. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T15

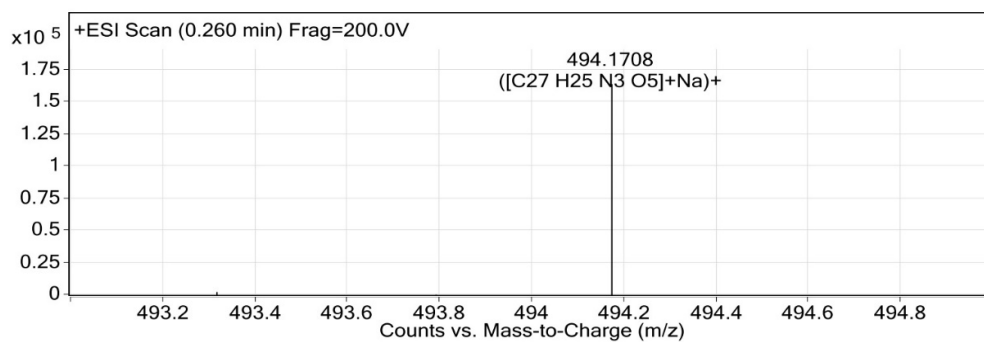


Figure S47. Mass spectrum of compound T15

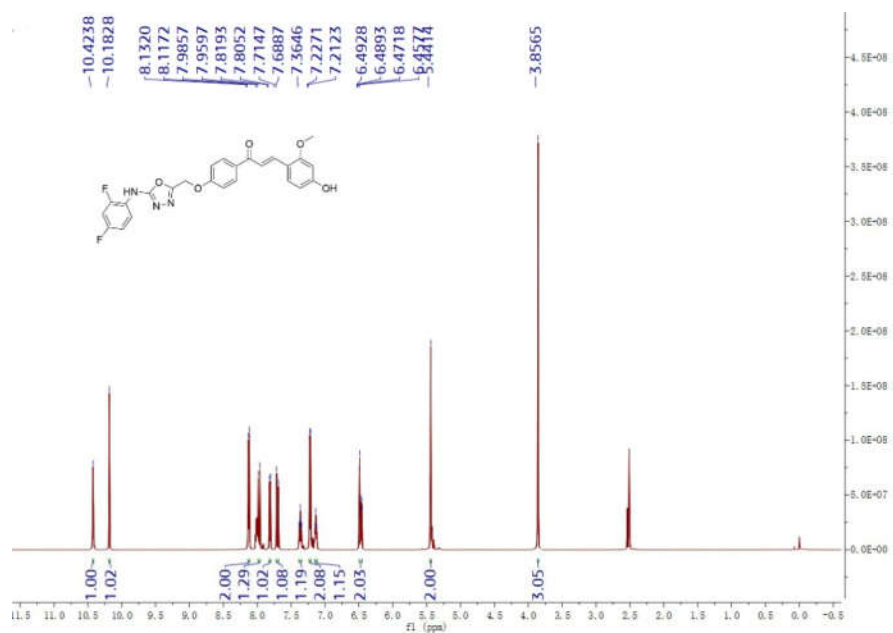


Figure S48. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T16

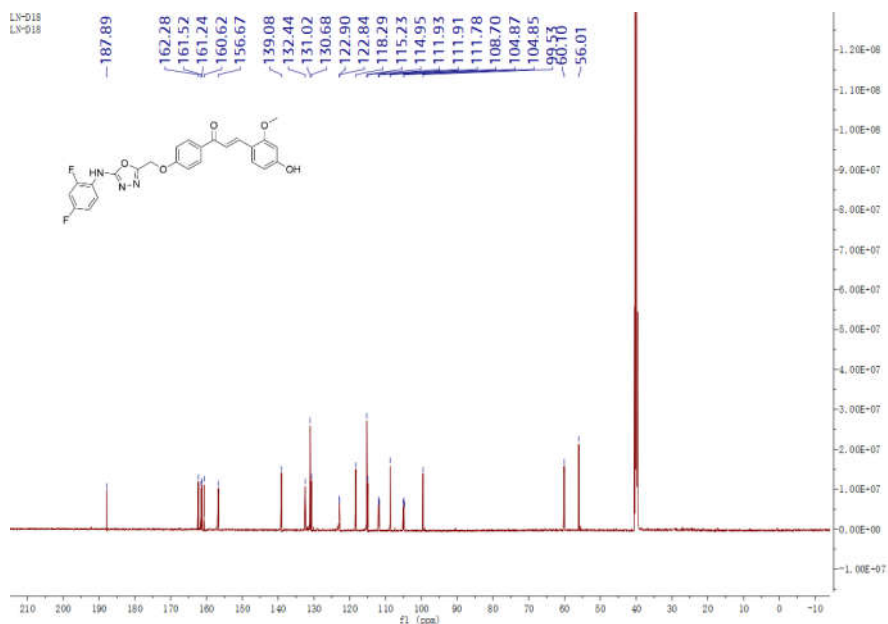


Figure S49. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T16

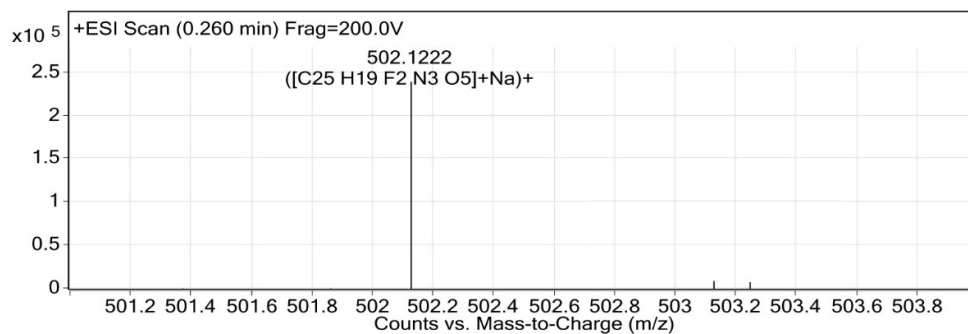


Figure S50. Mass spectrum of compound T16

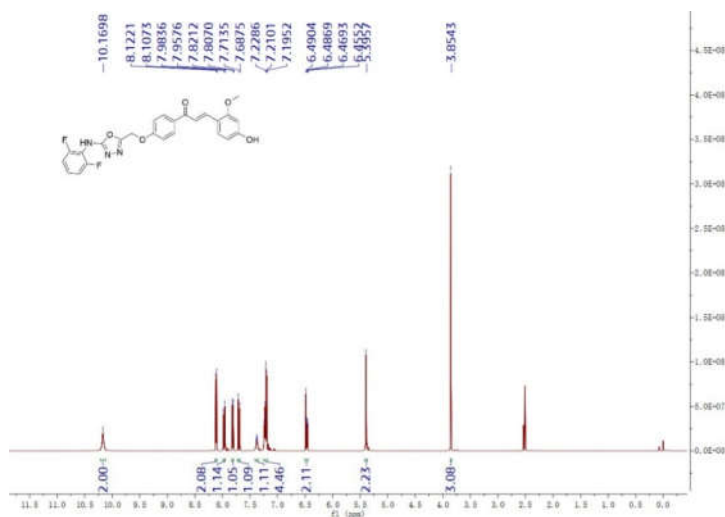


Figure S51. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T17

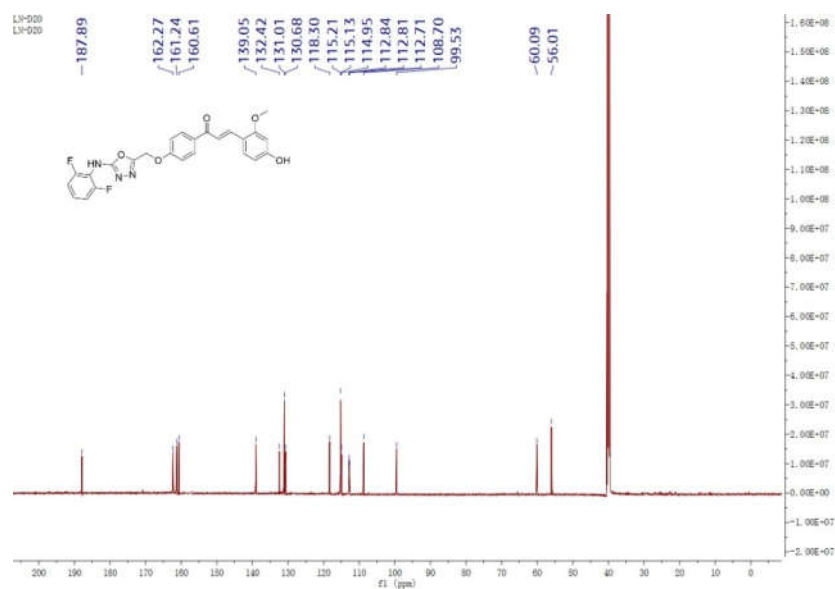


Figure S52. <sup>13</sup>C NMR (150 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T17

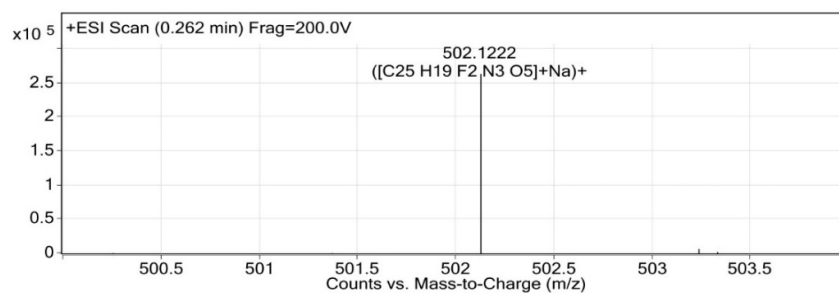


Figure S53. Mass spectrum of compound T17

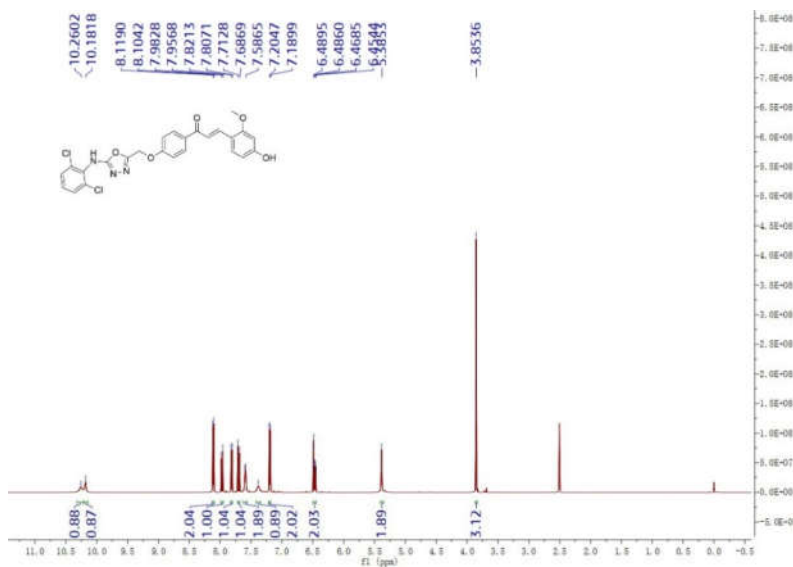
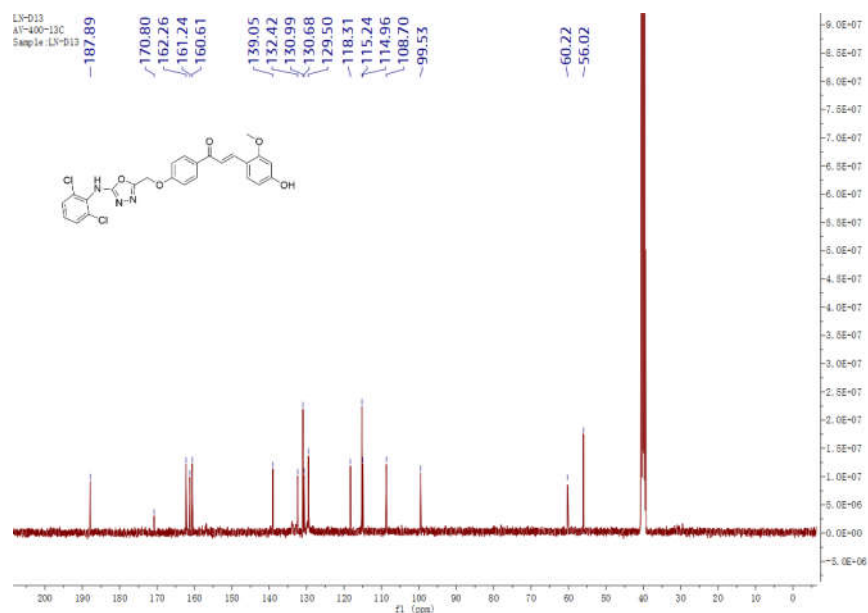
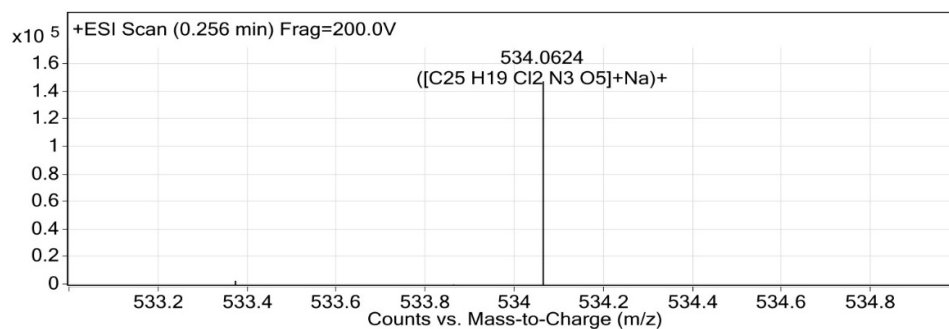


Figure S54. <sup>1</sup>H NMR (600 MHz, DMSO-*d*<sub>6</sub>) spectrum of compound T18



**Figure S55.**  $^{13}\text{C}$  NMR (150 MHz,  $\text{DMSO-}d_6$ ) spectrum of compound 18



**Figure S56.** Mass spectrum of compound T18